REPORTS # 6,7,8

NOTES ON SEASONAL HISTORY AND HABITS OF MISCELLANEOUS INSECTS

(ASHLAND AREA LAMB'S MINE UNIT PROJECT 15a 1916)

F.P. KEEN
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REPORTS #5,7,8

NOTES

ON

SEASONAL HISTORY AND HABITS

OF

MISCELLANEOUS INSECTS

ASHLAND AREA

LAMB'S PINE UNIT

PROJECT 15a

1916

By

F. P. Keen

Scientific Assistant.

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REPORTS #6, 7, 8.

NOTES ON

SEASONAL HISTORY AND HABITS OF MISCELLANEOUS INSECTS.

In connection with the seasonal history studies of D.brevicomis on the Lamb's Mine Unit, some notes have been obtained on the habits of some of the minor insects associated with the tree killing species.

IPS OREGONIS EICH.

Attacks

From the brood chamber there are on the average 3 radiating egg galleries with a maximum of 4 egg galleries.

Tree No.	Square Feet.	Attacks.
204	1	31
205	1	40
Average	35.5 attacks per square foot.	

Eggs.

The number of eggs per inch of gallery are as follows:-

Tree No.	Inches of Gallery	Eggs.
200	3	21
	2½	16
	3	16
	7	50
	15½	103

Average of 6.6 eggs per inch of gallery.

Emergence.

The emergence from a square of bark was recorded by checking off the emergence holes:-

Tree No.	Square Feet.	Attacks	Emergence.
205	1	40	90

Average of 90 emerging beetles to the sq.ft. of 2¼ to each attack.

But it is evident that this figure is too low and that bark should be caged in order to get total emergence, as many beetles probably emerge thru one hole.

Seasonal History.

Flight.

May 15,1916- Ips oregonis beetles were noted abundantly flying and resting on the outside of the field insect cages.

Attack.

Attacks were noted on April 22, May 20 and June 2, 1916.

Development of a brood.

The brood was followed thru in tree 205:-

Event No. a	Events b	First Event Period c	First Event Date d	Brood Period e	Duration Period f	Last Event Period g	Last Event Date h
1	Attack		130				
2	Egg	10	140	10	18		158
3	Larvae	18	158	28			
4	Pupae						
5	Adult						207
6	Emerging		184	54	54	31	238
7	Emerging Period	54	238	108			

In this tree the brood period from first attack to first emerging was 54 days; while the duration of emergence was for 54 more days.

GENERATIONS.

While the generations of this beetle have not been followed closely enough to give positive evidence, yet it is ~~always~~ generally found associated with Ips confusus and in the same stages a Hence it is very probable that we have one summer generation in newly felled logs, and an overwintering generation in the tops of mature or young trees.

ENEMIES.

One species of chalcid parasite has been reared from the larvae and pupae of these beetles. It has been identified by Mr. Rohwer as Roptrocerus species A. These parasites were very abundant in the trap trees infested by Ips oregonis and appeared to be killing a high percentage of the brood.

IPS EMARGINATUS.

Eggs.

Tree No.	Inches of gallery	Eggs.
200	5½	38
	6	30
	3	27
	14	95

Average — 6.8 eggs per inch.

Seasonal history.

Flight was observed during May and June and again in August and September. Attack was observed in May and June. The beetles overwintered as adults, eggs and small larvae.

The development during the summer as recorded in a few trees was as follows:

Tree 2A. Probably attacked in September 1915.

Event: a No.	Events b	First Event Period: c	First Event Date: d	Brood Period: e	Duration Period: f	Last Event Period: g	Last Event Date: h
1	Attack						
2	Eggs						119
3	Larvae		(325?)			20	139
4	Pupae		130xx			29	168
5	Adult	38	168xx			28	196
6	Emerging	16	184xx			14	210
7	Emerging Period	26	210xx				

Tree 209 Cut on April 26, 1916.

1	Attack		(153)				
2	Egg	(10)	163	(10)			
3	Larvae						
4	Pupae						223
5	Adult		207	54	24	8	231
6	Emerging	16	223	70	71	63	294
7	Emerging Period	71	294	141			

This shows a brood period from first attack to first emerging of 70 days, and a straggling emergence of 71 days.

Generations.

From the data so far collected it is not evident how many generations may occur during the year. However, there are at least two generations, one developing during the summer and another generation passing thru the winter.

FLATHEAD.

Although several trees were killed by flatheads, principally Melanophila gentilis, no consecutive records were kept on their development.

Pupae were found in the trees from the first to the last of April and adults formed from the last of April to the first of July.

Logs were attacked in May the larvae developing thru July, pupating about

the 20th of August and emerging in September.

DENDROCTONUS VALENS.

Attack.

First attack of D. valens was noted April 17. Later attacks were on June 12th and July 10th.

Attacks were on broken snags and in the base of trees perviously infested by other insects. No attacks were recorded on healthy trees.

Development of Broods.

From two record trees the following developments were obtained.

Tree 20 Standing snag.

Event: No. a	Events b	First Event Period c	First Event Date d	Brood Period e	Duration Period f	Last Event Period g	Last Event Date h
1	Attack		107				
2	Egg	41	148	41			
3	Larvae	50	178	71			
4	Pupae	39	217	110			
5	(Not followed past Pupae).						

Tree 19 Tree fell April 30, 1915.

1	Attack		163				
2	Egg	7	170				
3	Larvae	47	217				
4	Pupae						

Generations.

It would appear from the slow development in these trees that the brood does not emerge before winter, but passes the winter in the adult and larval state.

HYLURGOPS SUBCOSTULATUS.

Attacks.

Attacks by this species is on the base of insect killed trees. They seem to prefer the moist north side of trees and trees with sour sap.

Development of broods.

The broods in two trees were followed consecutively:-

Tree # 56

Event: No. a	Events b	First Event Period: c	First Event Date d	Brood Period: e	Duration Period: f	Last Event Period: g	Last Event Date h
1	Attack		(80)				
2	Egg	(7)	87	(7)	32		119
3	Larvae	18	105	25	35	21	140
4	Pupae					44	184
5	Adult					33	217
6	Emerging		203	123	35	21	238
7	Emerging Period	35	238	158			

Tree # 58

1	Attack		(73)				
2	Egg	(7)	80	(7)			
3	Larvae	20	100	27			119
4	Pupae						
5	Adult						
6	Emerging		196	123	42		238
7	Emerging Period	42	238	165			

These records show a brood period of 123 days, from first attack to first emerging.

Generations.

The records are not complete enough to accurately determine the number of generations. But there appears to be one complete generation during the summer, hence it is very probable that there are two generations during the year.

CYLINDROCOPTURUS LONGULUS Lec.

The oviposition of this small weevil, which is often found in infested yellow pines was observed June 22,1916, while examining a piece of infested bark which had just been removed from tree # 125.

A female lit on the piece of exposed bark and wandered about until she came to a D.brevicomis gallery free from frass. After examining the bottom of the gallery with her beak for a few seconds, she commenced boring and prying with her beak. She bored and pried, moving her beak from side to side and also backwards and forwards. She removed the beak a couple of times,

removing a small piece of frass which was placed on the edge of the hole. At one time she seemed to have her beak caught, but finally succeeded in extracting it. The boring operation lasted for about ten minutes, and until the hole was as deep as $\frac{3}{4}$ the length of her beak.

On completing the hole she turned around in the gallery and commenced backing over the cavity feeling about with the tip of the abdomen for the cavity. It was finally located and the ovipositor was sunk into the hole and an egg deposited.

In a few seconds this operation was complete. The ovipositor was then removed and the small particles of frass, left on the edge of the hole, were raked into it with the abdomen and tapped into place completely covering the egg. The raking of the frass and tamping lasted for about one minute. Then she moved away and commenced looking for another suitable spot.

CLERUS NIGRIVENTRIS.

July 3,1916- Tree 53- Newly formed adults were found in pupal cells in the bark. D. brevicomis had abandoned the tree.

PLATYSOMA PUNCTIGER.* (Family:- Histeridae)

June 21,1916 - Two Hister beetles were found copulating in a D. brevicomis gallery in yellow pine # 200. They were pointed in opposite directions.

OTHER INSECTS.

Many other insects were collected at different times from the infested trees. Very few however, are of any economic importance.

Among these were:-

Ergates spiculatus Lec.- Larvae found in old abandoned trees.

Pityophthorus spp.- Larvae and new adults in twigs.

Pityogenes carinulatus Lec.-- Attack, eggs and larvae noted in twigs of trap trees.

Hylastes sp.- Often found under bark of dead trees.

Gnathotricus sp.- In sapwood of dead trees. New attacks noted.

* Identified by Mr. F[illegible]

Xyleborus sp.-- Found in sapwood.

Acanthocinus spectabilis -- Larvae, pupae and adults found in spring in D.brevicomis trees.

Othnius sp.-- Common around infested trees. Noted to be abundant at different times of the year.

Clerus sphegans-- Common. Found running over infested trees.

Cossonus ponderosae V.D.-- Very common in sapwood of yellow and sugar pines. Found on all of abandoned trees, and recently killed trees.

Passaloecus sp.(Rohwer Id.)- Found developing in bark of infested trees.

Homalota sp.--Common in the galleries of D.brevicomis and Ips confusus.

Plegaderus nitidus Horn.-- A small black beetle very common in the galleries of D.brevicomis, and Ips confusus.

Hypophloeus parallelus Melsh.-- A small red beetle commonly found in galleries of D.brevicomis.

Aulonium longum Lec-- A red beetle slightly larger than Hypophloeus, and found very commonly in infested trees. They have been observed feeding on the parent adults of D.brevicomis. They are probably predaceous.

Lonchaea polita Say(viridana Loig ?) ?(Greene Id) - This fly was reared from larvae and pupae found under the bark of a tree killed by Ips confusus.

Medeterus aldrichii Wheeler (Greene Id) - This fly was reared abundantly from bark infested with D.brevicomis.

Respectfully submitted,

F. P. Keen

Scientific Assistant.

Ashland, Ores

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